

Listing of Claims:

- DRAFT**
1. (currently amended) A method of producing a superabsorbent polymer product for use in agricultural applications, comprising:
providing grafting reactants and a starch;
graft polymerizing the grafting reactants onto the starch to form a starch graft copolymer;
saponifying the starch graft copolymer;
precipitating the saponified starch graft copolymer; and
granularizing the precipitated starch graft copolymer to form granules of superabsorbent polymer product ~~sized for use in agricultural applications; and~~
isolating for use in agricultural applications granules of superabsorbent polymer product having a granule size that is between about 5 mesh and about 25 mesh.
 2. (original) The method of claim 1, wherein the grafting reactants include an initiator and an acrylonitrile.
 3. (currently amended) The method of claim 2, wherein the grafting reactants further include a chemical selected from the a group consisting essentially of acrylic acid, acrylamide, and 2-acrylonitrile-2-methyl-propanesulfonic acid.
 4. (original) The method of claim 2, wherein the starch and the acrylonitrile are present in a weight ratio of between about 1:2 and about 1:5.
 5. (original) The method of claim 2, wherein the initiator is a cerium salt.
 6. (original) The method of claim 2, wherein the initiator is ceric ammonium nitrate.
 7. (original) The method of claim 1, wherein the starch is selected from a group consisting essentially of pure starches, flours, and meals.
 8. (original) The method of claim 1, wherein the starch is a gelatinized starch.
 9. (original) The method of claim 1, wherein the starch is cornstarch.
 10. (canceled) The method of claim 1, wherein the granules have a particle size that is about 200 mesh or less.
 11. (currently amended) The method of claim [10] 1, wherein the [particle] granule size is between about 5 mesh and about [50] 20 mesh.
 12. (currently amended) The method of claim [10] 1, wherein the [particle] granule size is between about 8 mesh and about [25] 15 mesh.
 13. (original) The method of claim 1, wherein precipitating the saponified starch graft copolymer involves mixing an alcohol with the saponified starch graft copolymer.

14. (currently amended) The method of claim 13, wherein the alcohol is selected from [the] a group consisting essentially of methanol, ethanol, propanol, and isopropanol.

Claims 15-19 (canceled).

20. (original) A superabsorbent polymer product for use in agricultural applications made in accordance with the method of claim 1.

21. (new) A method of producing a superabsorbent polymer product for use in agricultural applications, comprising:

graft polymerizing a grafting reactant onto a starch to form a starch graft copolymer;

saponifying the starch graft copolymer;

precipitating the starch graft copolymer;

granularizing the starch graft copolymer to form granules of superabsorbent polymer product; and

isolating for use in agricultural applications granules of superabsorbent polymer product having a density that is between about 30 pounds per cubic foot and about 35 pounds per cubic foot.

22. (new) A method of producing a superabsorbent polymer product for use in agricultural applications, comprising:

graft polymerizing a grafting reactant onto a starch to form a starch graft copolymer;

saponifying the starch graft copolymer;

precipitating the starch graft copolymer;

granularizing the starch graft copolymer by adding an alcohol solution to the starch graft copolymer and thereby forming granules of superabsorbent polymer product; and

isolating for use in agricultural applications granules of superabsorbent polymer product that have a granule size that is between about 5 mesh and about 25 mesh.

23. (new) The method of claim 22, in which granularizing the starch graft copolymer includes agitating the starch graft copolymer during addition of the alcohol solution.

24. (new) The method of claim 22, in which granularizing the starch graft copolymer includes cutting the starch graft copolymer into granules of superabsorbent polymer product.

25. (new) The method of claim 24, in which cutting the starch graft copolymer into granules of superabsorbent polymer product occurs before addition of the alcohol solution.

26. (new) The method of claim 24, in which cutting the starch graft copolymer into granules of superabsorbent polymer product occurs after addition of the alcohol solution.

27. (new) A method of producing a superabsorbent polymer product for use in agricultural applications, comprising:

graft polymerizing a grafting reactant onto a starch to form a starch graft copolymer;
saponifying the starch graft copolymer;
precipitating the starch graft copolymer by adding an acidic solution to the starch graft copolymer;
granularizing the starch graft copolymer to form granules of superabsorbent polymer product; and

isolating for use in agricultural applications granules of superabsorbent polymer product that have a granule size that is between about 5 mesh and about 25 mesh.

28. (new) A method of producing a superabsorbent polymer product for use in agricultural applications, comprising:

graft polymerizing a grafting reactant onto a starch to form a starch graft copolymer;
saponifying the starch graft copolymer;
precipitating the starch graft copolymer; and
pelletizing the starch graft copolymer to form pellets of superabsorbent polymer product that have a pellet size that is between about 5 mesh and about 25 mesh.

29. (new) A method of producing a superabsorbent polymer product for use in agricultural applications, comprising:

graft polymerizing a grafting reactant onto a starch to form a starch graft copolymer;
saponifying the starch graft copolymer;
precipitating the starch graft copolymer;
passing the starch graft copolymer through a die plate and thereby forming granules of superabsorbent polymer product; and

isolating for use in agricultural applications the granules of superabsorbent
polymer product that have a granule size that is between about 5 mesh and about 25 mesh.